Remarks

Applicant requests reconsideration and allowance of this application in view of the foregoing amendment and the following remarks.

Claim 1 as amended recites an oil separator for use in a vehicle compressed air system, comprising a fixture for mounting said oil separator to a vehicle; an oil separator cartridge connected with the fixture for coalescing oil in air supplied to the oil separator; and a recycling valve that is selectively operable in response to increases and decreases in air pressure from the vehicle compressed air system for removing coalesced oil from the oil separator. (emphasis added)

The structure defined by claim 1 is neither shown in nor suggested by the references.

The primary reference, Dickson, does not relate to a vehicle compressed air system as does the present invention. Dickson relates to a crankcase gas recirculation system for removing oil from crankcase gases, and not to a vehicle compressed air system as specified in the claims.

The secondary reference, Betts, also does not relate to a vehicle compressed air system, but instead relates to a diesel engine waste oil recycling system. In this reference, when the engine is turned off, a maintenance worker can drain and recycle the oil from the engine crankcase. This has nothing to do with the present invention.

The tertiary reference, Walbridge, relates to a mobile aerial lift with boom structure and does not relate at all to oil recycling.

In addition, none of the cited references, including the primary reference Dickson, coalesces oil in a separator cartridge. Dickson relies on pressure differential to cause smaller particles of oil to collide with each other at the variable orifice 751, and to collect into larger particles that are large enough not to be carried along by the air stream. These larger particles then (column 9, lines 40+) drop by gravity to the bottom of the filter cartridge 760. They then drip out of the bottom of the filter cartridge into the oil reservoir 775, from which they may be removed using the valve 780. Thus, the agglomeration of the smaller particles into larger one takes place before the filter

medium. "As will be explained below, the variable orifice 751 acts as an agglomerator." (Col. 7, line 51-52)

With such a device, any small particle that is not "agglomerated" at the orifice 751 can travel through the medium in the filter cartridge 760 and flow out of the separator, still being carried by the air stream. Particles in the compressor output that are potentially problematic are at or below the 10 micron size range. These particles are so small that they exhibit Brownian motion; gravity does not affect them. They are unlikely to be effectively captured by the variable orifice.

In contrast, claim 1 specifies agglomerating particles within the separator cartridge. In addition, claim 1 specifies a recycling valve that is selectively operable in response to increases and decreases in air pressure from the vehicle compressed air system for removing coalesced oil from the oil separator. This structure is not shown in any of the cited references.

Thus, none of the cited references discloses or can suggest an oil separator for use in a vehicle compressed air system, as recited in claim 1. Accordingly, claim 1 is allowable.

Claims 2-15 are dependent directly or indirectly from claim 1 and are allowable at least for the same reasons as claim 1. In addition, new claim 34 further brings out features of the separation process in specifying an oil separator as set forth in claim 1 wherein as compressed air flows through the oil separator cartridge, oil is separated from the compressed air, condensing into large oil droplets; the fixture having an exit passage that receives compressed air and oil droplets from the cartridge, the compressed air and condensed oil flowing through the exit passage into a sump in which the oil droplets are deposited and accumulated, clean compressed air exiting from the sump through a sump exit passage. Claim 34 is also allowable.

Independent claim 16 recites a method comprising the steps of directing compressed air into a cartridge of an oil separator to coalesce oil in the compressed air; collecting the coalesced oil in a sump attached to the oil separator; and opening a recycling valve attached to the sump to enable coalesced oil to flow out of the sump.

The method defined by claim 16 is neither shown in nor suggested by the references. Dickson does not direct compressed air into an oil separator; rather, Dickson

relates to a crankcase gas recirculation system for removing oil from crankcase gases. Betts, which is cited for the recycling valve, does not coalesce oil and does not relate to a separator; rather, Betts shows only manual draining of an engine crankcase. Therefore, the method defined by claim 16 is neither shown in nor suggested by the references, and claim 16 is allowable.

Claims 17-21 are dependent directly or indirectly from claim 16 and are allowable at least for the same reasons as claim 16.

Claim 22 recites an oil separator for use in a vehicle air system, comprising a fixture for mounting the oil separator to a vehicle, and an oil separator cartridge connected with the fixture for coalescing oil in air supplied to the oil separator. The fixture includes an inlet port for allowing air from a compressor into the fixture and a delivery port for allowing air to exit the oil separator after being cleaned. The fixture includes a plurality of ports extending from the inlet port for directing air from the inlet port into the cartridge, the plurality of ports having a combined flow area at least equal to the flow area of the inlet port.

The structure defined by claim 22 is neither shown in nor suggested by the references. Applicant respectfully submits that neither the primary reference, Dickson, nor the secondary reference, Betts, shows:

> an inlet port for allowing air from a compressor into the fixture and a delivery port for allowing air to exit the oil separator after being cleaned; and
> a plurality of ports extending from the inlet port for directing air from the inlet port into the cartridge, the plurality of ports having a combined flow area at least equal to the flow area of the inlet port.

For these reasons, applicant submits that independent claim 22 is allowable.

Claims 23-26 are dependent directly or indirectly from claim 22 and are allowable at least for the same reasons as claim 22.

Claim 27 as amended recites a vehicle compressed air system comprising a compressor for compressing air, an air dryer for drying the compressed air, and an oil separator. A fixture is for mounting the oil separator to a vehicle. An oil separator cartridge is attached to the fixture for coalescing oil in air supplied to the oil separator. The fixture includes an inlet port for allowing air from the compressor into the fixture and a delivery port for allowing air to exit the oil separator after being cleaned. An air

line is for delivering air from the fixture to the air dryer. The fixture includes a pressure relief valve in fluid communication with the inlet port for releasing air from the oil separator in response to air pressure reaching a predetermined amount. The pressure relief valve is mounted on the fixture and creates an audible signal upon releasing air.

The structure defined by claim 27 is neither shown in nor suggested by the references. None of the references relates to a vehicle compressed air system. Further, the pressure relief valve in the tertiary reference, Walbridge, does not create an audible signal upon releasing air. Specifically, Walbridge shows one embodiment, discussed in the last paragraph of column 3, in which moisture content is measured (presumably electronically) to initiate "visible and/or audible alarms" that are separate and distinct from any pressure relive valve. An alternative embodiment (discussed at first full paragraph of column 4) uses a separate pressure release valve (not shown) for use "When it is not desired to actuate a humidity alarm module". In that embodiment, the only "indication" provided is a desiccant which changes color from blue to pink.

Therefore, the structure defined by claim 27 is neither shown in nor suggested by the references, and claim 27 is allowable.

Claims 28-33 are dependent directly or indirectly from claim 27 and are allowable at least for the same reasons as claim 27.

All of the claims of this application being allowable, applicant respectfully requests notice to that effect. Please contact applicant's undersigned attorney at (216) 622-8578 if there are questions on this matter.

Respectfully submitted,

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